## Art. II.—*Notes on the Radiometer.*

By R. L. J. Ellery, Esq.

[Read 11th May, 1877.]

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## Art. III.—*On the Improvement of the Port of Melbourne.*

By T. E. Rawlinson, C.E.

[Read before the Royal Society of Victoria, 8th June, 1876.]

In resuming the subject of a paper read before the members last session on proposed works for the improvement of the Port of Melbourne, I purpose replying, as far as possible, to questions asked and objections raised at the time and since to certain features of the proposed scheme.

These questions and objections appear to resolve themselves into the following:—

1st. The data on which I assume the width of 1000 feet as necessary for the proposed new channel and basin.

2nd. The oft repeated allegation that the River Yarra has debouched at various times at several places between St. Kilda and the present entrance at Williamstown.

3rd. That the estimated total cost is far in excess of our present means.

In replying to the first I must remind members that I stated the width assumed was based on certain generalisations, and subject to modification if necessary on receipt of accurate data as to the amount of flood discharges down the Yarra; but although to this extent empirical, it was in a large measure based on a knowledge of the extensive discharge of flood waters over the St. Kilda-road, between the Prince's Bridge approach, and the Immigration Barracks Hill, additional to the heavy discharge through the Prince's Bridge and the Dry Arch south of it. In addition to this evidence there was the 200 feet span of Church-street Bridge flooded to a great height, through which the water tore in a torrent, destroying the sheet piling and roadway underneath; while at Johnston-street Bridge, with an opening of 175 feet, the water rose to a great height and was equally mischievous, owing to its great velocity and consequent destructive energy. The sectional area of the torrent at this place was between 4000 and 5000 feet, whilst